



Oxides of Nitrogen (NO_x)

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Oxides of nitrogen, or NO_x, is a key contributor to several significant health and environmental problems in California, including air pollution and acid rain. Reducing NO_x is a primary goal of the federal Clean Air Act and one of the top goals of California's Smog Check program.

Sources: Most of California's NO_x emissions come from motor vehicles. Standards controlling NO_x emissions from vehicles were imposed beginning with the 1971 model year. As a result, NO_x emissions have dropped significantly since the 1970s.

However, the federal Clean Air Act, as amended in 1990, requires states with poor air quality regions to make even further reductions. To measure NO_x emissions, the Bureau of Automotive Repair (BAR) has developed a test that uses a treadmill-like machine called a dynamometer that allows vehicles to be tested under simulated driving conditions. This allows the Smog Check program to measure NO_x pollutants coming directly from the tailpipe. The goal of the Smog Check Program is to reduce an additional 100 tons of pollutants, including NO_x, from California's air each day.

Characteristics: Recent research indicates NO_x displays a Jekyll-and-Hyde characteristic. Freshly emitted NO_x will actually destroy locally present ground-level ozone. But as soon as NO_x is exposed to sunlight...a photochemical reaction takes place, converting much of it to ground-level ozone. Researchers have linked NO_x to a broad range of other pollution, including: nitrate particles that limit visibility; acid rain/snow; and wintertime nitrogen dioxide (NO₂) that produces the beautiful, but unhealthy, purple sunsets common in the Los Angeles area and other California cities.*

Health Effects: Exposure to NO_x can damage the respiratory tract and the body's immune system, increasing a person's susceptibility to infection.

However, when NO_x is converted to ground-level ozone, it becomes even more dangerous. Ground-level ozone is a strong bronchial irritant, which can make it harder to breathe for people with asthma and other respiratory diseases. Prolonged exposure to ground-level ozone can also cause permanent lung damage.*

For more information about air pollution, visit the California Air Resources Board Web site: www.arb.ca.gov

*Source: California Air Resources Board.

*California's
Smog Check
Program aims to
reduce more than
100 additional
tons of pollutants
from California's
air every day.*

Healthy Air is Everyone's Job!